

CLAIMS

- 1 1. A magnetic head, comprising:
- 2 a first magnetic pole layer;
- 3 a heating device being disposed above said first magnetic pole layer;
- 4 a first magnetic pole pedestal member being disposed above said heating device,
- 5 such that said heating device is disposed between said first magnetic pole layer and said
- 6 first magnetic pole pedestal.
- 1 2. A magnetic head as described in claim 1 wherein said heating device includes an
- 2 electrically resistive heating element.
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- 1 3. A magnetic head as described in claim 2 wherein said heating device includes a
- 2 pair of electrical leads, and wherein said electrically resistive heating element is disposed
- 3 directly beneath said leads.
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- 1 4. A magnetic head as described in claim 3 wherein said electrically resistive heating
- 2 element includes an outer edge, and each of said electrical leads includes an outer edge,
- 3 and wherein said outer edge of said electrically resistive heating element and said outer
- 4 edges of said electrical leads are aligned in a plane.

1 5. A magnetic head as described in claim 1 wherein a first electrical insulation layer
2 is disposed between said first magnetic pole layer and said heating device, and wherein a
3 second electrical insulation layer is disposed between said heating device and said first
4 magnetic pole pedestal.

1 6. A magnetic head as described in claim 5 wherein said first electrical insulation
2 layer is thicker than said second electrical insulation layer.

1 7. A magnetic head as described in claim 6 wherein said first electrical insulation
2 layer is approximately 1,000 Å thick, and said second electrical insulation layer is
3 approximately 250 Å thick.

1 8. A magnetic head as described in claim 2 wherein said electrically resistive heating
2 element is a layer of electrically conductive material having a thickness of approximately
3 400 Å, and having a track width of approximately 2 microns and a stripe height of
4 approximately .5 microns.

1 9. A magnetic head as described in claim 8 wherein said electrically resistive heating
2 element is comprised of NiCr or NiFe.

1 10. A magnetic head as described in claim 8 wherein the magnetic head includes an
2 air bearing surface, and wherein said heating device is disposed away from said air
3 bearing surface.

1 11. A hard disk drive including a magnetic head, comprising:
2 a read head element;
3 a write head element;
4 a media heating device; wherein said write head element includes a first magnetic
5 pole and a first magnetic pole pedestal, and wherein said heating device is disposed
6 between said P1 magnetic pole and said P1 pole pedestal.

1 12. A hard disk drive as described in claim 11 wherein said heating device includes
2 an electrically resistive heating element.

1 13. A hard disk drive as described in claim 11 wherein a first electrical insulation
2 layer is disposed between said first magnetic pole and said heating device, and wherein a
3 second electrical insulation layer is disposed between said heating device and said first
4 magnetic pole pedestal.

1 14. A hard disk drive as described in claim 13 wherein said first electrical insulation
2 layer is thicker than said second electrical insulation layer.

1 15. A hard disk drive as described in claim 14 wherein said first electrical insulation
2 layer is approximately 1,000 Å thick, and said second electrical insulation layer is
3 approximately 250 Å thick.

1 16. A hard disk drive as described in claim 12 wherein said electrically resistive
2 heating element is a layer of electrically conductive material having a thickness of
3 approximately 400 Å, and having a track width of approximately 2 microns and a stripe
4 height of approximately .5 microns.

1 17. A hard disk drive as described in claim 16 wherein said electrically resistive
2 heating element is comprised of NiCr or NiFe.

1 18. A hard disk drive as described in claim 11 wherein the magnetic head includes an
2 air bearing surface, and wherein said heating device is disposed away from said air
3 bearing surface.

1 19. A method for fabricating a magnetic head including a media heating device,
2 comprising the steps of:
3 fabricating a first magnetic pole upon a layer of the magnetic head; fabricating a
4 heating device upon said first magnetic pole, said heating device including an electrically
5 resistive heating element and electrical leads;
6 fabricating a P1 pole pedestal upon said heating device.

1 20. A method for fabricating a magnetic head as described in claim 19 including the
2 further steps of:
3 fabricating a first electrical insulation layer between said first magnetic pole and
4 said heating device, and
5 fabricating a second electrical insulation layer between said heating device and
6 said P1 pole pedestal.

1 21. A method for fabricating a magnetic head as described in claim 20 wherein said
2 first electrical insulation layer is thicker than said second electrical insulation layer.

1 22. A method for fabricating a magnetic head as described in claim 19 wherein said
2 heating element is a layer of electrically conductive material having a thickness of
3 approximately 400 Å, and having a track width of approximately 2 microns and a stripe
4 height of approximately .5 microns.

1 23. A method for fabricating a magnetic head as described in claim 19, wherein at
2 least a portion of an edge of said electrically resistive heating element and a portion of an
3 edge of said electrical leads are fabricated in a single milling process step.

1 24. A method for fabricating a magnetic head as described in claim 23, wherein said
2 electrically resistive heating element and said electrical leads are formed away from an
3 air bearing surface of said magnetic head.